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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,899	07/12/2001	Paul Wolejko	SAA-0055	2016

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INTELLECTUAL PROPERTY DEPARTMENT
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EXAMINER

PEREZ DAPLE, AARON C

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/903,899

Applicant(s)

WOLEJKO ET AL.

Examiner

Aaron Perez-Daple

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to Amendment filed 3/8/04, which has been fully considered.
2. Claims 1-38 are cancelled by Applicant.
3. New claims 39-61 are presented for examination.
4. This Action is made Final.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claims 52-61** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the term “without utilizing the controller” in line 7 renders the claim indefinite. It is unclear whether Applicant intends to claim that a controller is not present at all in the system or merely that the trigger signal for the reflex function is not processed by the controller between triggering and executing. For the purpose of applying prior art, the Examiner interprets that the trigger signal for the reflex function is not processed by the controller between triggering and executing. This interpretation is supported by the specification, see pg. 6, lines 11-20.
7. As dependent claims, claims 53-61 suffer from the same deficiencies as claim 52.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. **Claims 39-42, 44, 46, 47, 49, 50, 52-57, 59 and 60** are rejected under 35 U.S.C. 102(b) as being anticipated by Dummermuth (US 6,073,053).

10. As for claim 39, Dummermuth discloses a control system comprising:

an input module structured to respond to a condition by transmitting a representative signal (As disclosed by applicant in the second paragraph of page 1 of the specification, input modules include sensors such as optical sensor 26, Fig. 1, which would be operably connected to the communication conduit via terminals 66, Fig. 2.; col. 3, lines 27-48, "An example industrial...the actuator assembly 30."); and

an output module (I/O card 18, Fig. 2) operably coupled to the input module, the output module including firmware configurable with at least one of a first reflex function and a second reflex function, the first reflex function being structured to produce a state signal in response to receiving the representative signal from the input module (The output signal is inherently a state signal.; col. 3, lines 7-14, "Fig. 3 is a...on one I/O card.").

11. As for claim 40, Dummermuth discloses a control system as defined in claim 39, wherein:

the first reflex function comprises at least one of a Boolean logic function, a comparison function, a counter function, a timer function, and an edge detection function (col. 4, lines 50-65, "The delay circuit...an optical sensor.") and

the second reflex function comprises at least one of a Boolean logic function, a comparison function, a counter function, a timer function, and an edge detection function,

wherein the first reflex function is different than the second reflex function (col. 4, lines 50-65, "The delay circuit...an optical sensor.").

12. As for claim 41, Dummermuth discloses the control system as defined in claim 39, further comprising a computer based tool to configure the firmware with one of the first reflex function and the second reflex function (col. 2, lines 29-38, "The logic circuit...the central processor."; col. 4, lines 16-19, "The processor module...in the art.").
13. As for claim 42, Dummermuth discloses the control system as defined in claim 39, wherein the output module is coupled to the input module by a bus (Fig. 2; col. 3, lines 49-51, "Referring now to Fig. 2...a memory 44.").
14. As for claim 44, Dummermuth discloses the control system as defined in claim 39, wherein the output module is coupled to the input module by a network (Figs. 1 and 2).
15. As for claim 46, Dummermuth discloses the control system as defined in claim 39, further comprising a master scanner operatively coupled to the input module and the output module (col. 4, lines 13-16, "Similarly but not shown...in the I/O image table.").
16. As for claim 47, Dummermuth discloses the control system as defined in claim 39, wherein the master scanner comprises a programmable logic controller (central processor 12, Fig. 2).
17. As for claim 49, Dummermuth discloses the control system as defined in claim 39, wherein the first reflex function is specified in an object dictionary (memory 52 and 54, Fig. 2; col. 3, line 65 – col. 4, line 7, "The I/O image table...arrows 58 and 60.").

18. As for claim 50, Dummermuth discloses the control system as defined in claim 39, wherein the object dictionary is embedded within a master scanner (central processor 12, Fig. 2; col. 3, line 65 – col. 4, line 7, “The I/O image table...arrows 58 and 60.”).
19. As for claim 52, Dummermuth discloses a control system comprising:
 - an input module structured to respond to a condition by transmitting a representative signal (As disclosed by applicant in the second paragraph of page 1 of the specification, input modules include sensors such as optical sensor 26, Fig. 1, which would be operably connected to the communication conduit via terminals 66, Fig. 2.; col. 3, lines 27-48, “An example industrial...the actuator assembly 30.”); and
 - an output module (I/O card 18, Fig. 2) operably coupled to the input module, the output module including a reflex function structured to produce a state signal in response to receiving the representative signal from the input module, the output module being structured to execute the reflex function without utilizing a controller (The output signal is inherently a state signal.; col. 3, lines 7-14, “Fig. 3 is a...on one I/O card.”; col. 2, lines 19-24, “Thus, it is one...the central processor.”).
20. As for claim 53, Dummermuth discloses the control system as defined in claim 52, further comprising the controller operably coupled to the input module and the output module (Figs. 1 and 2).
21. As for claim 54, Dummermuth discloses the control system as defined in claim 53, further comprising a configuration tool operably coupled to the output module, the configuration tool being structured to configure the reflex function (col. 2, lines 29-38, “The

logic circuit...the central processor.”; col. 4, lines 16-19, “The processor module...in the art.”).

22. As for claim 55, Dummermuth discloses the control system as defined in claim 54, wherein the configuration tool is structured to configure the reflex function by programming firmware associated with the output module (col. 2, lines 29-38, “The logic circuit...the central processor.”; col. 4, lines 16-19, “The processor module...in the art.”).

23. As for claim 56, Dummermuth discloses the control system as defined in claim 52, wherein the reflex function is at least one of a Boolean logic function, a comparison function, a counter function, a timer function, and an edge detection function (col. 4, lines 50-65, “The delay circuit...an optical sensor.”).

24. As for claim 57, Dummermuth discloses the control system as defined in claim 52, wherein the output module is coupled to the input module by a network (Figs. 1 and 2).

25. As for claim 59, Dummermuth discloses the control system as defined in claim 52, wherein the first reflex function is specified in an object dictionary (memory 52 and 54, Fig. 2; col. 3, line 65 – col. 4, line 7, “The I/O image table...arrows 58 and 60.”).

26. As for claim 60, Dummermuth discloses the control system as defined in claim 59, wherein the object dictionary is embedded within a master scanner (central processor 12, Fig. 2; col. 3, line 65 – col. 4, line 7, “The I/O image table...arrows 58 and 60.”).

Claim Rejections - 35 USC § 103

27. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

28. **Claims 43, 45, 48, 51, 58 and 61** are rejected under 35 U.S.C. 103(a) as being obvious over Dummermuth (US 6,073,053) (hereinafter Dummermuth) in view of Edwards et al (US 5,938,754) (hereinafter Edwards).
29. As for claims 43, 45 and 58 Dummermuth does not specifically teach the use of CANopen protocol. Edwards teaches the use of CANopen protocol in industrial manufacturing applications for detection and correction of transmission errors caused by electromagnetic interference (col. 2, lines 23-38, "Comparison of automotive...Honeywell Microswitch."). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Dummermuth by using CANopen protocol over either a network or a bus because this would provide an easily configurable system and allow for detection and correction of transmission errors caused by electromagnetic interference, as taught by Edwards.
30. As for claims 48, Dummermuth does not specifically disclose a reflexive control system wherein the master scanner is a field bus coupler. Edwards teaches the use of a field bus and a field bus coupler in an industrial control system for easily configuring a system and for detection and correction of transmission errors caused by electromagnetic interference (col. 1, lines 9-22, "A fieldbus is a specific...Fieldbus network."; field bus coupler is inherent for coupling with the field bus). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Dummermuth by using a field bus coupler as the master

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scanner in order to employ a CAN network because this would provide the advantages of an easily configurable system and detection and correction of transmission errors caused by electromagnetic interference, as taught by Edwards.

31. As for claims 51 and 61, Dummermuth does not specifically disclose assigning first and second addresses to the input and output modules, respectively. Edwards teaches assigning addresses to all devices connected to a network for use in a CANopen network which provides the advantages of easily configuring a system and for detection and correction of transmission errors caused by electromagnetic interference (col. 1, lines 9-22, "A fieldbus is a specific...Fieldbus network."; field bus coupler is inherent for coupling with the field bus). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Dummermuth by assigning first and second addresses to the input and output modules, respectively, in order to employ a CAN network which has the advantages of an easily configurable system and detection and correction of transmission errors caused by electromagnetic interference, as taught by Edwards.

Response to Arguments

Specification

32. Objections to the title are hereby withdrawn in view of the Amendment.

Prior Art Rejections

33. With respect to new independent claim 39, Applicant asserts that Dummermuth (6,073,053) fails to teach the limitation "the output module including firmware configurable with at least one of a first reflex function and a second reflex function." The Examiner

respectfully disagrees. The claim clearly recites “at least one of,” which is in the alternative. Therefore Dummermuth only needs to teach a single reflex function and is not required to teach changing the reflex function itself in order to meet the claim limitation. Moreover, with reference to claim 40, the Examiner finds that Dummermuth does teach firmware configurable with first and second reflex functions. See col. 4, lines 50-65, which disclose configuring the reflex function as either a timer or an edge detection function. For the reasons above, the Examiner finds that claim 39 is properly rejected under 35 USC 102(b) as anticipated by Dummermuth.

34. With respect to new independent claim 52, Applicant asserts that Dummermuth fails to teach the limitation “without utilizing a controller.” The Examiner respectfully disagrees. Under the interpretation presented in the 112 Claim Rejections above, Dummermuth only needs to teach execution of the reflex function without first processing the signal at the controller. Dummermuth clearly teaches this advantage. See col. 2, lines 19-24:

Thus, it is one object of the invention to provide for extremely fast response to certain control situations within the context of a general purpose industrial controller by avoiding communication of control data to the central processor.

See also the abstract. The passages cited by Applicant (col. 4, lines 25-38; col. 5, lines 18-27 and Fig. 3) refer to the *enable* signal, which is sent by the central processor. This is fundamentally different from the *trigger* signal, which actually initiates the reflex function *without utilizing the controller*. As shown in Fig. 3, the enable signal and the trigger signal are fed into an AND gate. The enable signal functions to ensure that the reflex function is not enabled prior to configuration or when the machine is in a state where it is not desirable to enable to the reflex function, see col. 4, lines 25-49, “Referring now to Fig. 3...as will be

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described.” When the reflex function is enabled, the trigger function then acts to activate the reflex function without utilizing the controller. For the reasons above, the Examiner finds that Dummermuth meets all the limitations of claim 52, which is properly rejected under 35 USC 102(b) as anticipated by Dummermuth.

Conclusion

35. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

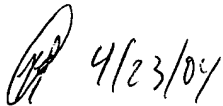
36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Perez-Daple whose telephone number is 703-305-4897. The examiner can normally be reached on 9am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 703-308-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information

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about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Handwritten signature of Aaron Perez-Daple, dated 4/23/04.

Aaron Perez-Daple

Handwritten signature of Anthony Knight.

Anthony Knight
Supervisory Patent Examiner
Group 3600